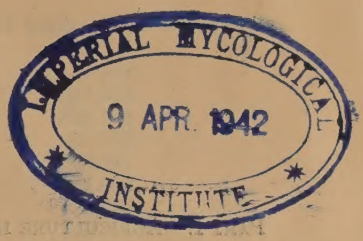
TRINIDAD AND TOBAGO.

Council Paper No. 71 of 1941.



AGRICULTURE.

Administration Report of the Director of Agriculture for the year 1940.

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TRINIDAD AND TOBAGO.
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REPORT OF THE DEPARTMENT OF AGRICULTURE FOR THE YEAR 1940.

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DEPARTMENT OF AGRICULTURE.

Administration Report of the Director of Agriculture for the year 1940.

Council Paper No. 71 of 1941. *M.P. No. 52562.*

I.—AGRICULTURE IN 1940.

The colony's agricultural exports for the year were valued at $8,680,164 made up as follows:—

	$
Sugar and by-products	4,537,181
Cocoa	2,289,605
Coconuts and coconuts products	338,198
Coffee	82,055
Limes and lime products	298,147
Grapefruit and oranges	612,304
Grapefruit and orange juices	95,077
Bananas...	13,876
Tonka Beans	223,229
Pulses, Beans and Peas	7,939
Livestock and hides	4,912
Bitters	87,719
Miscellaneous	89,922
	8,680,164

2. Weather conditions in 1940 were in general more favourable for agriculture than in 1939 and with better prices the total value of exports was higher than in 1939 in spite of the lower yield of sugar canes. Copra and other coconut products have for many years held the third place in value in the list of exports: in 1940 they were replaced by grapefruit.

SUGAR.

3. The adverse effect of the late rains in the harvesting season of 1938 on ratoons and on soil tillage resulted in a shorter crop than was anticipated and the colony was unable to fill its export quota.

Sugar Production.

4. The sugar manufactured amounted to 92,256 tons.

Exports.

5. Exports of sugar and sugar by-products during 1940 are given below:—

		$
Sugar	1,546,294 Cwt.	4,308,876
Molasses...	1,109,492 Gal.	55,475
Rum	253,691 Gal.	172,830

Price of Sugar.

6. All the sugar exported was sold to the Ministry of Food at a price of 11/7½d. per cwt., f.o.b.

Cane Farming Industry.

7. Cane farmers received $969,309 for 289,346 tons of cane at a basic figure of $3.35 per ton under the terms of the Cane Farming Control Ordinance. Farmers have depended to too large an extent on ratoons since the contract system was introduced, but replanting was undertaken on 1940 on a larger scale than in the last three years.

8. The reduction in farmers' canes during the past three years has been due to a number of causes, the more important of which are believed to be:—

(1) *International Sugar Agreement and Cane Farming Control Ordinance.*

The Ordinance led to farmers aiming at producing less than their contracts rather than risk a surplus for which the sale would be uncertain.

The customary influx of farmers planting on new and comparatively fertile lands was checked.

(2) *Excessive rains in* 1938.

Severe damage was done to young ratoons, the effect of which was felt in 1939 and 1940.

Froghopper Injury.

9. Froghopper injury was unusually severe during the year. Methods of control designed by the Entomologist proved successful on the lands of one sugar Company.

COCOA.

10. Cocoa exports amounted to 24,858,838 lb. valued at $2,289,605.

Price.

11. The price of plantation cocoa for the year 1940 ranged from $8.69 to $10.92 per fanega of 165 lb., and the average return to the members of the Cocoa Planters' Association for the crop year July, 1939, to June, 1940, was $10.34 per fanega.

Witchbroom.

12. Witchbroom and inadequate cultivation, as the result of low prices, have caused serious deterioration of the cocoa industry of Trinidad. The continued spread and the increased intensity of witchbroom infection over large areas under cocoa cultivation make the discovery of witchbroom resistant strains a problem of first importance ; and tests for resistance are being actively conducted at Marper with planting material brought by Dr. Pound from Ecuador and the Amazon Valley, and, also, with the progeny of local trees that have shown comparative freedom from witchbroom.

13. In Tobago witchbroom infection is very slight and is limited to certain small areas. An island-wide search was again made for infected trees but the disease was not found in new areas. Regular inspections are made of the four centres where the disease was found and all brooms and mushrooms discovered are destroyed.

14. The loss of Immortelle trees, with the consequent damage to cocoa, continued to be severe in the Sangre Grande district.

Cocoa Subsidy.

15. The original Cocoa Subsidy Scheme came to an end in 1939. The new scheme was not put into operation in 1940.

COCONUTS.

16. In terms of nuts, the exports of copra, coconut oil, and nuts amounted to 51,159,184 nuts valued at $338,198. Details of the exports are given below :—

			$
Coconuts	No.	2,603,677	43,490
Copra	Cwt.	139,012	276,768
Coconut Oil	Gal.	41,055	17,940

17. In addition, shipments of locally manufactured lard substitute, coconut oil and soap were made principally to neighbouring colonies.

18. Young trees in the Icacos district planted to replace those damaged by the hurricane in 1933 are fast approaching a stage of heavy bearing ; and deaths from wilt, in areas susceptible to this physiological trouble, have been more than offset by production from these young cultivations.

Price.

19. The price fixed for copra under the Copra Ordinance was $1.60 per 100 lb. during the year except for a few days in January when it was $3.00 per 100 lb.

Bonus to Copra Producers.

20. Oil factories purchased 13,285,936 lb. of copra and bonuses amounting to $141,516 were distributed to producers of copra at an average rate of 45.3c. per 100 lb.

GRAPEFRUIT AND ORANGES.

21. Yields were favourable and prices were satisfactory during the 1939-40 season and the Co-operative Citrus Growers' Association handled 227,336 field crates of grapefruit and 5,026 of oranges.

Exports Crop Year 1939–1940.

		Quantity.	*Value.*
Grapefruit—fresh	Field crates	148,935	$297,870
Grapefruit—			
Juice canned	Cases	67,490	97,760
Hearts canned	Cases	5,431	7,875

22. Much concern was felt by citrus growers towards the end of the year at the closing of the United Kingdom market to fresh grapefruit for the 1940-41 season.

LIMES AND LIME PRODUCTS.

23. Exports and values of limes and lime products follow :—

		Quantity.	*Value.*
Lime Oil.			$
Distilled	lb.	49,373	202,354
Handpressed ...	lb.	1,505	8,193
Lime Juice.			
Concentrated ...	Gal.	—	—
Raw	Gal.	110,841	41,883
Citrate of Lime ...	lb.	586,650	44,919
Green Limes ...	brl.	152	786

24. Root troubles brought about by the severe drought were in evidence during the year and resulted in a high percentage of deaths in some lime plantations.

COFFEE.

25. The exports in 1940 amounted to 1,186,717 lb. valued at $82,055.

TONCA BEANS.

26. Young plants continue to come into bearing and exports for the year were 127,015 lb. of which the value was $223,229.

BANANAS.

27. Exports of bananas amounted to no more than 35,688 bunches in 1940 valued at $13,876. The decline in exports was partly due to disease factors and also to a progressive increase in the consumption of this class of fruit locally.

FOOD PRODUCTION.

28. The area given out by Government as war gardens exceeded 600 acres and, in addition, lands were given out by many private owners. There is an improvement in the utilization of land for food crops generally, although much still remains to be accomplished.

29. There was an extension of the rice areas of the Colony as schemes for drainage and improvement of 2,000 acres of land were completed, but the exceptional drought prevented the planting of many rice fields and resulted in a short crop for the colony as a whole.

30. The maize crop was larger than usual and fair prices obtained in most districts. Imports, which now require a permit, were reduced by nearly 1,000 tons. Government sanctioned funds for a scheme for a small corn drying and storage plant sufficient for conditioning and storing 130 tons of maize. Approval was received too late in the season to take any action as regards the 1940 crop, but, as events subsequently proved, the restriction placed on imports kept prices at a fair level. Seeds of selected strains were distributed to small proprietors free of charge.

31. A number of ladies, organized with the kind help of Mrs. S. Liddelow, assisted the Department in demonstrations designed to educate housewives and school girls in methods of bottling, canning and otherwise preserving local foodstuffs in times of surplus. Public meetings and special classes were held for this purpose.

32. Through the co-operation of the Cotton Growing Corporation, the services of Dr. Phillis were made available to assist and advise in these and other matters connected with food production.

33. Although the results achieved by the local food campaign are difficult to assess, the decrease in imports of certain commodities must be attributed, at least in part, to the special propaganda. During the year imports of maize were reduced by 62.2 per cent., rice 20.2 per cent., beans and peas 9.5 per cent. and potatoes 9.5 per cent. There were also large reductions in beef and pork—pickled or salted—codfish, canned meats and condensed milk.

LIVESTOCK.

Importation of Livestock for Food—1940.

	Number.	*Value.* $
Cattle	5,678	301,670
Goats	6,529	12,223
Sheep	2,744	6,782
Swine	6,852	47,793
Poultry	72,316	26,449

Importation of Meat and Eggs, 1940.

Meat.	*Weight. Cwt.*	*Value.* $
Fresh and Chilled Meat	17,337	336,879
Pickled or Salted	24,962	261,656
Smoked and Cured	13,009	246,533
Canned, tinned, &c.	4,018	111,899
Meat extracts and essences	33	6,220

Eggs.	*Quantity Great Hundred* (120)	*Value.* $
In shell	6,394	25,962
Not in shell	252 cwt.	7,222

Importation of Livestock and Eggs from Tobago.

	Number.	*Value.* $
Horses	24	2,160
Mules	42	4,200
Donkeys	30	900
Sheep	523	2,615
Goats	1,567	4,701
Pigs	3,951	39,510
Cattle	691	27,640
Dogs	35	175
	6,863	81,901

Poultry.	*Dozen.*	*Value* $
Fowls	5,419	35,765
Turkeys	5	240
	5,424	36,005
Eggs	2,194	789.84

34. To meet the need for meat and pork and dairy products there was a further development of the scheme of itinerant breeding units and altogether five units were on tour at nine stations. Also, bulls, buck goats and boars have again been loaned to approved breeders. 585 animals were bred to these sires. Young mules and donkeys of improved size, dairy calves, kids and better types of pigs demonstrate the good effect of these breeding units in past years. Rhode Island cockerels reared on the Government Farm were exchanged with common roosters owned by small proprietors and British Alpine does were presented to seven schools. Well bred animals comprising 20 head of cattle, 2 horses, 8 goats, 63 pigs and 67 poultry were sold by auction at the Annual Sale at the Government Farm, Trinidad.

Animal Diseases.

35. There was no serious outbreak of animal disease in the colony. No cases of paralytic rabies occurred in bovines or equines and there was a reduction in the incidence in the bat transmitter; only four bats were found with Negri bodies of fifteen hundred examined by the Government Bacteriologist.

Improvement of Livestock.

36. Propaganda work connected with the rearing of livestock was continued and the Livestock Officer addressed many meetings in various parts of the Colony.

II.—DEPARTMENTAL INSTITUTIONS, DISTRICT WORK, EXPERIMENTAL WORK AND SPECIALISTS REPORTS.

DEPARTMENTAL INSTITUTIONS.

RIVER ESTATE.

Mr. R. O'Connor, Manager, River Estate, reports as follows:—

Rainfall.

2. The rainfall at River Estate amounted to 57.74 inches. During the months of May and June there were fires on the surrounding hills, but little damage was done to River Estate cultivation.

Cocoa.

3. The crop amounted to 765 bags which realised $11,703.24. The cultivation was maintained as usual; the remainder of Field 7 was cleared for new plantings of cocoa and Field 15 is now being entirely cleared to make room for experimental blocks of a variety of nut-bearing crops.

4. The replanting of these areas enables much more corn and provisions to be grown on the estate than is usually obtained; 168 barrels of corn were reaped during the year. The programme of adding pen manure to River Estate both by trenching and by broadcasting was continued and Fields 3A, 18A, as well as other areas were treated.

5. All the interplanted areas in Field 1 and Field 17 as well as a portion of Field 25 have been given to labourers free of rent for growing food. Witchbroom disease continues to increase on the Estate.

Citrus.

6. The dry year had a somewhat detrimental effect on the citrus at River Estate. In the main grapefruit block a certain amount of pen manuring was carried out and fertilisers applied. Several blocks of grapefruit and oranges have been planted to replace cocoa. Owing to the dry weather citrus scab was not prevalent.

Tonca Beans.

7. A record crop of Tonca Beans was reaped during the year owing to the fact that several new areas came into bearing. A number of new experiments in this crop were laid down.

Minor Crops.

8. A record crop of Robusta Coffee was reaped. The timber areas have not required much work as in many places the trees are old enough to fend for themselves. A record revenue of $182.49 was obtained from the Mango plot. Cercospora leaf spot is very prevalent. Two plots of Adlay were grown but the weather was too dry and the yield was not particularly good.

Stock.

9. The stock owned by the Estate were maintained in good condition as usual.

ST. AUGUSTINE NURSERY.

10. The Manager, Mr. F. C. Buthn, reports that a total of 127,793 nursery plants were distributed during the year of which there were 52,801 seedling and 6,176 budded cocoa, 8,996 oranges, 3,172 grapefruit and 9,633 seedling lime plants.

11. There was a strong demand for vegetable seedlings grown in boxes, 1,855 being distributed.

12. Two batteries of propagators for cocoa cuttings with hardening bins and potting shed were completed and put into use.

ST. AUGUSTINE EXPERIMENT STATION.

13. The citrus experiments were maintained on the usual lines, the crop being disposed of for export through the Co-operative Citrus Growers' Association and also by local sales; the crop realised $2,862.78.

14. Multiplication and distribution of new varieties of seedling canes were carried on as usual.

15. Attention was given to the extension of the Avocado collection by a number of new varieties. Select seed of maize, pigeon peas and other crop plants was grown for distribution.

ROYAL BOTANIC GARDENS AND GOVERNMENT GROUNDS.

16. The Curator, Mr. R. E. Dean, reports that the Botanic Gardens and Grounds around Government buildings in Port-of-Spain under the control of this Department were maintained in a satisfactory manner. Regular attention was paid to the Botanic Station and Government House Grounds, Tobago.

17. New planting schemes, undertaken were : new area Botanic Gardens, Queens's Royal College, Education Offices, Customs Offices, Judges' Quarters, San Fernando, Young Offenders' Detention Institutions, Reclaimed Area, and Golden Grove Camp.

GOVERNMENT STOCK FARM AND ANIMAL HUSBANDRY.

18. The Manager, Government Farm, Captain H. V. M. Metivier, O.B.E., reports :—

General—Extension Work—Itinerant Breeding Units.

19. Breeding units were stationed in eight districts :—

Districts.	*Duration.*
Sangre Grande	12 months.
Debe and Penal	12 months.
Princes Town	8 months.
Arima	8 months.
Four Roads and Diego Martin	4 months.
Cedros	4 months.
Rio Claro	4 months.
Todd's Road and Longdenville	4 months.

Their number was increased from four to five so as to allow of their stay for longer periods in districts where there was a great demand for their services, and in order to do this for two periods of the year.

20. The number of services in the itinerant breeding units were : Mares (to Jacks) 47, Jennies 59, Cows 228, Goats 96, Sows 57.

21. As in the past, arrangements were also made to stand individual stud animals (bulls, bucks, boars, &c.), where there was a demand for their services, under the care of some private individual or estate and who was responsible for the feeding and care. In return they received the service fees, based on the Government fixed rates.

22. The Livestock Officer was in charge of these breeding units and stud animals and visited them regularly. During his absence in Tobago for 4 months, the work was carried out chiefly by Mr. J. H. Brooks, Clerk and Supervisor.

23. At the district Agricultural Shows itinerant breeding units consisting of a Jack Donkey (for mule and donkey breeding), a Dairy Bull (Holstein-Friesian), a Boar (Large Black or Berkshire) and a Dairy Buck (British Alpine) were exhibited, and stayed in the district subsequently for service.

24. After-crop shows for cane farmers and peasants were held at Tacarigua, Caroni, Chaguanas, Gran Couva, California, Princes Town and Debe. These shows were again a success and the good work the breeding units are doing is beginning to be seen especially in the cattle.

Cattle.

Murrah Water Buffaloes.

25. The two bulls imported from India were also sent to the five outlying districts during the year, chiefly on sugar estates, at a rental of $8 per month, the proprietor feeding and caring the bull.

26. The two imported cows Nos. 2 and 3 calved a bull and a heifer respectively, and were again heavy in calf at the end of the year.

Registration of Livestock.

27. A further list of 74 bulls and heifers born or purchased since the last registration of cattle in the Herd Book of the Agricultural Society in 1939, were inspected by a Sub-Committee of the Animal Husbandry Committee and registered during the year.

Holstein Friesian Cattle.

28. An order was placed with the Department of Agriculture in Canada for two pure bred Holstein bull calves and three pure bred Holstein heifer claves. These animals are due to arrive in the colony early in 1941.

29. The two pure bred imported bulls from the Carnation Farms, Seattle, Washington " Sir Inka May 45th " (calves 1935) and " Carnation Inka May Perfection " (calves December 1938) stood for service at the Farm, chiefly to selected cows and heifers on our strength.

30. During the year 13 bull calves by Sir Inka May 45th were sold to peasants chiefly for rearing and service in their districts. Six bull calves were selected for rearing at the Farm for outside breeding work. Three grade bulls by " Sir Inka May 45th " were transferred to the Mucurapo Breeding Station during the year and another of his sons was sold for service in the Toco district. During the year the pure bred Holstein bull " Jameson " and the grade Holstein (¾) bull " Norman " stood for service at the Farm.

31. The pure bred Holstein Carnation Bull " El Mena Wayne " bred in the colony, again stood for service on the Farm throughout the year. The young pure bred Holstein Bull and the yearling pure bred Holstein bull, both locally bred, have grown well.

Sussex Herd.

32. The pure bred imported bull " Chartham Perkins " is now thoroughly acclimatised, and the young bull " Flambeau 12 " has developed into a very nice specimen : this younger bull was sent to Apex Oilfields, Fyzabad, to stand for service from August to October. The grade Sussex cows on the whole milk well but the majority of the calves are allowed to suckle their dams.

Zebu Cattle.

33. The large herd of pure bred and Zebu Foundation stock were kept at pasture and brought in once daily for their concentrates. The small Zebu herd that have been specially selected for dairy purposes (Dairy Zebu Herd) were again separated from the other Zebu stock and the young heifers and bulls that have been hand-reared are tethered and handled daily. The cows and heifers in calf are placed into calving boxes as the time for parturition or calving approaches, and are handled in the same manner as dairy cattle. The results from this herd are still not very encouraging, the chief drawback being the extremely short lactation period.

Sahiwal or Montgomery Cattle.

34. The Sahiwal cattle calved during the year and the milk returns from these cows again did not come up to expectations, with the exception of two cows that produced a maximum day's yield of 16½ lb. and 27 lb. The cows seem to go "dry" much sooner than typical dairy cattle, but it is hoped that by selection from those locally born to obtain much better results later on. The cattle, however, are very docile and are easily handled. The strength of this herd at the end of the year was: 4 bulls, 2 bull calves, 6 cows, 2 heifers, and 3 heifer calves.

Pasturage and Stabling.

35. Two hundred and twenty-three privately owned cows and heifers were bred to pure bred and grade bulls at the Farm. Seven Water Buffalo cows and heifers were also bred to the imported bulls at the Farm.

36. At the Department's bull service station at Mucurapo, specially maintained for the dairying districts around Port-of-Spain, the services were as follows:—

To Pure Bred Bulls	229 cows and heifers.
To Grade Bred Bulls	88 cows and heifers.

At River Estate a pure bred Holstein Bull was stationed throughout the year and the number of cows and heifers bred there was 64.

37. At the Annual Sale on 7th December, the following cattle were sold :—

	Number.	*Average Price Obtained.*
		$
15 Grade Holstein Heifers		80.00
4 Zebu Foundation Heifers		60.00
1 Zebu Foundation Bull		120.00

38. The small dairy herd purchased in 1938 for the Health Department to supply the Settlement at Chacachacare with fresh milk was maintained at the Farm as a separate entity during the year, as arrangements were still not yet completed for their transfer to the Cocorite Detention Station. During the year about 12,000 quarts of milk were supplied to the Settlement from this herd. Two cows from this herd that were not giving satisfactory results were sold to the butcher, and four bull calves were sold to peasants for rearing for district service. The strength of the herd at the end of the year was as follows: 11 cows, 1 heifer and 2 heifer calves.

Milk Yield.

39. The Dairy Herd produced 42,783 gallons of milk during the year and 33,316 gallons were supplied to the Public Institutions. The milk yield of each cow was again weighed morning and afternoon and the butter fat content of each cow tested regularly: the mixed milk average was: morning milk 3.6, afternoon milk 4.3.

New Processing Milk Plant.

40. The new processing milk plant was completed at the end of the year but was working as a separate entity as the new cold storage room was not connected up with the old one; this meant that storage space for milk was less than before and the scheme for purchasing, processing and bottling milk (50 gallons daily) for school children within a 10 mile radius of the Farm could not be carried out.

Health and Disease.

41. One hundred and twenty-three cows and heifers calved during the year and ten aborted, as compared with seventeen last year. Strict preventive measures were again adhered to in controlling this condition.

Horsekind.

Thoroughbred Stallions.

42. The thoroughbred stallion "Tyrrelese" (1934) again stood for service throughout the year at the Tobago Farm. The thoroughbred stallion "Young Native" (1929) was sent to Tobago in February to take the place of "Bachelor's Tut" (1925) who was returned to this Farm in February.

43. The thoroughbred stallions "Flotsam" (1934), "Knight of St. Patrick"—K.P.—(1925) and "Bachelor's Tut" stood for service in Trinidad during the year.

44. The stallion "Flotsam" presented to Government by the Trinidad Turf Club has developed into a very fine stud animal and did very well in his first season as most of the mares to whom he was bred appeared to be in foal.

Jack Donkey Stallions.

45. The imported pure bred Jack Donkey Stallion "Sultan" (1936) was returned to Trinidad from Tobago in February following an attack of Laminitis from which he recovered. The other imported pure bred Jack "Prince Shannon" (1937) was sent to Tobago in January to replace "Sultan".

46. During the year the Jack Donkey Stallions "Emperor 2" and "Kentucky" (both imported) and "Jackie" (1934), "Penn" (1936) and "Trinidad Joe" (1935), all locally bred, did service with the itinerant breeding units. The imported pure bred Jack Donkey Stallion "Tom Adams" was purchased in April from Forres Park Estate and stood for service at the Farm so as to relieve the other Jack Donkey Stallions for service in country districts.

47. The services of these donkeys in Trinidad can be summarised as follows:—

	Mares.	*Jennies.*
At the Farm (Trinidad)	28	13
Breeding Units	47	59

Pigs.

48. In order to augment the strength of boars available for extension work, two young Large Black Boars and 2 Berkshire Boars were selected from the young pigs at the Farm.

49. At the Annual Sales, 30 Large Blacks and 33 Berkshires were offered and realised $954.50, an average of $15.00 per head. Private sale of pigs during the year amounted to $459.00 making a total of $1,413.50

Goats.

50. The Jumnapari does and their kids, imported from India in 1939, have all become acclimatised, but two of the imported bucks were never thrifty and died during the year. The two other imported bucks stationed in Tobago kept in good health as in the case of the imported does. The buck kid born on the voyage from India has grown well, and is now at the head of the flock. With the exception of one doe which is giving some trouble to "hold", all the females of this breed have kidded, but in nearly every case only one kid was born. The number of these goats on our strength at the end of the year was as follows: Bucks 2, Young Bucks 4, Buck Kids 2, Does 8, Goatlings 1.

51. The Anglo-Nubian Bucks have done good service in grading up on lop-eared goats (Local Indian Type). It was decided during the year to select the two best Jumnapari does for breeding to the Anglo-Nubian Buck "Malpas Merrymac" in order to introduce some of the hardy Indian blood into the highly selected Anglo-Nubian type.

52. There were three imported British Alpine Bucks on our strength at the end of the year. The bucks in the breeding units are all locally bred pure bred British Alpines and were all registered, together with the does, in the Herd Book of the Agricultural Society. The well-bred Buck "Bodington Whisk" that had given such excellent service and was greatly in demand died during the year. This dairy breed of goats is proving quite satisfactory, and there is always a big demand for pure bred and grade British Alpine.

53. During the year 146 does and goatlings were bred to the bure bred Bucks at the Farm (135 to British Alpines). At the Mucurapo Service Station 122 goats and goatlings were bred to the pure bred British Alpine bucks. In the breeding units the number was 97. Besides the bucks standing for service in the breeding units, and at the Mucurapo Service Station, 18 buck goats of the different breeds were also sent to out-districts to stand for service.

54. At the Annual Sale, 8 goats (5 pure bred British Alpines and 3 grade Anglo-Nubians) were sold, and they realised $333.00, an average of approximately $42 each.

Blackhead Persian Sheep.

55. The young ram standing for service was not getting his ewes to "hold" and it was decided to send the two ewes to the pure bred ram in Tobago and also to try out our ram with a bigger flock over there. During the year only two outside ewes were bred to the ram at the Farm.

Poultry.

56. The five pens of pure bred poultry ordered from Canada in 1939 arrived early in the year and were made up of: Rhode Island Reds (2 pens), Barred Plymouth Rocks (2 pens), White Leghorn (1 pen). Each pen consisted of 1 cock and 6 hens. One pen each of Barred Plymouth Rocks and Rhode Island Reds and a pen of White Leghorns (from the Farm Stock) were transferred to the Tobago Farm.

57. In order to further stimulate poultry husbandry in the colony, 80 Rhode Island Red cockerels were given to peasants in exchange for common roosters. Rhode Island Red chicks were also distributed to the following schools: Tacarigua C.M., D'Abadie Government School, Caroni C.M., Sangre Grande Government, Salibia Government.

58. The same three breeds (Rhode Island Reds, Barred Plymouth Rocks and White Leghorns) were again kept on the Farm, and breeding arrangements were the same as in previous years, the breeding pens being made up in October and broken up in April. At the annual sale, 26 lots of pure bred poultry (50 birds) were sold, and they fetched $198.50, an average of approximately $2.00 per head. Six lots of Muscovy Ducks (18 birds) were also offered, and they fetched $44.50. The number of eggs laid during the year was 5,800 most of which were used for hatching purposes, and the revenue derived from the sale of eggs was $257.41.

Pasturage and Stabling.

59. Mares were stabled during the breeding season for mating to the thoroughbred stallions and a few mares and jennies were pastured for breeding to the Jack Donkey Stallions. There were also pastured throughout the year a few cows and heifers sent for breeding to the Holstein and Zebu bulls. The stabling accommodation for goats was again fully used up and many sows were also stabled when sent for service.

Sale of Stock.

60. The Annual Sale was held on 7th December and again all the animals were previously inspected by the Animal Husbandry Committee of the Agricultural Society. The Sale was conducted by the officers of the Farm and the total amount realised was $3,507.50. Details on the various classes of stock sold were as follows :—

Classes.	*Number.*	*Amount realised.*
		$
Cattle	20	1,567.00
Horsekind	2	410.00
Goats	8	333.00
Pigs	63	954.50
Poultry	49	198.50
Ducks	18	44.50

61. Private sale of stock amounted to $2,220.29 making a total of $5,707.79 for all sales during the year, as compared with $5,303.37 for 1939.

Pasturage and Fodder Crops.

62. The pastures suffered from the drought which continued into July and the yields of fodder from the grass and cane fields were also low.

Uba Canes.

63. Of the 5 acres planted in 1939, 3 acres were reaped. The other 2 acres had to be left over as the plants were too young to be cut. Three more acres were planted during the year, and cleaning was given to the old ratoons. At the end of the year the growth of all the Uba canes was most satisfactory and there should be no fodder shortage for 1941.

Sugar Canes.

64. Cane crop started on 13th February and ended on 20th April. 376 tons 12 cwt. 2 qr. were supplied to the Trinidad Sugar Estates, Ltd., and 236 tons 3 cwt. 2 qr. to the Imperial College of Tropical Agriculture Sugar Factory and the price obtained was $3.35 per ton, making a total revenue of $2,052.87. At crop time 14 acres were replanted in B.H.10 (12).

Improvements, Repairs, &c.

65. A small worker's home, built with local materials (Timit roof) was erected by the Forest Department for demonstration purposes and handed over to the Farm.

Educational Work, Visitors, &c.

66. The post graduates and Third Year students for the 1939-1940 sessions of the Imperial College of Tropical Agriculture visited the Farm early in the year, and the students for the next session 1940-1941 paid their visit at the end of the year. The Second Year Diploma students visited the Farm on several occasions for their practical classes in animal husbandry and the Post Graduates and Third Year students also had a general practical class in animal husbandry. Several schools also paid visits to the Farm during the year as well as students from the Government Training College.

DISTRICT WORK.

Duties of District Staff.

67. The Agricultural Assistants continued to give rather more than half their time to Cacao Subsidy and Agricultural Bank duties, particularly in connection with a detailed report as to the suitability of properties for rehabilitation under the proposed scheme. They gave special attention to Food Production duties and assisted the Wardens in the selection and allotment of War Gardens.

68. There were 5 District Agricultural Exhibitions held at Rio Claro, Penal, Cedros, Arima and Tobago as well as 7 Cane Farmers' and Peasants' Shows in sugar areas. The Juvenile Farm Club in Tobago held another successful exhibition.

LAND SETTLEMENTS.

69. A district staff consisting of a Supervisor and three Instructors were appointed to supervise the work on Land Settlements, the Agricultural Assistants continuing to look after certain settlements in their districts.

70. Extensions of old settlements and four sites obtained last year by purchase were laid out into 288 lots. Two further estates were purchased, one as an extension to the Buenos Ayres Settlement, the other for a new Settlement in the Santa Cruz Valley ; these are in process of being laid out.

71. Matters of improvement to roads, water, supply drainage and housing, the provision of pasturage and recreation grounds have received attention. There is still much to be done in all these matters.

AGRICULTURAL CO-OPERATIVE SOCIETIES.

72. There were 60 Societies in operation, 46 in Trinidad and 14 in Tobago. One new Society was formed during the year. Forty societies are financed and operated by Government and the remainder by the Usine Ste. Madeleine Company.

73. In Tobago 10 Societies were granted loans totalling $5,000. Loans were refused four Societies which had made little effort to meet their previous obligations.

OTHER CO-OPERATIVE ORGANISATIONS.

74. Three fermentaries in Tobago had a successful season and made the highest payments to growers for cocoa since their establishment. The affairs of the Parlatuvier Fermentary were wound up by the Registrar, Co-operative Societies, due to lack of support, and consequent failure to meet its obligations.

75. In Trinidad progress is reported in the volume of business done by the two Government fermentaries.

76. The Tobago Lime Growers' Association had a most successful year's work due to improved management and good prices for lime oil. A final payment of (1.00 per barrel of limes less 20 cents cess was made for the year ended April 30th, 1940.

77. The Tobago Producers' Association continued to make satisfactory progress.

78. The Co-operative Citrus Growers' Association had a very successful season and members received an average of $1.00 per box of packed fruit. The returns from canning operations just covered expenses.

79. The Coconut Growers' Association Ltd., manufactures edible oil, lard substitutes and margarine on a co-operative basis, and has had a successful season.

80. The Lime Oil Producers of Trinidad Ltd., have marketed co-operatively through the parent organization the West Indian Lime Oil Sales Company approximately 90 per cent. of the output of lime oil produced in the Colony. Good prices were obtained.

81. The Trinidad and Tobago Limes Association Ltd., continue to look after the interests of the lime trade generally and steps were taken during the year to get a parent West Indian Association established.

EXPERIMENTAL WORK.

SUGAR AGRONOMY.

82. The Sugar Agronomist, Mr. P. E. Turner, reports that his work during 1940 may be summarised thus—(1) Field Experiments with Manures, with Cultural and Planting Methods, and with Varieties. (2) Soil Analyses relating to Manurial Treatment. (3) Soil Surveys for Allocation of Varieties. (4) General.

(1) Field Experiments.

83. Forty-eight new experiments were laid down in 1940. Sixty experiments were harvested on soil types which have been identified and described. The effects of the treatments on yield of cane and sugar and on crop quality are recorded in detail in the Annual Report published by the Sugar Cane Investigation Committee.

Manures.

84. A single dressing of finely divided limestone (equal to lime requirement) is shown to give large gains in yield over seven successive crops. Its beneficial effects have not yet begun to diminish. Less satisfactory results are recorded for a coarser limestone. It is again confirmed that liming can have decided adverse effect on crop quality which nevertheless is unimportant in comparison with gain of cane. Heavy dressings of sulphate of ammonia are again shown seriously to diminish gain from liming. Potash is again shown essential to obtain maximum gain from liming on potash-deficient soil (and *vice versa*). Annual dressings of sulphate of ammonia have given large gains in yield of cane and sugar over seven successive crops on an acid, humus-deficient clay. There are no signs that the beneficial effects are lessening with time. Similar results have been obtained with heavier dressings on another soil type. The effects of sulphate of ammonia on crop quality have been found dependent on size of dressing and time of application of the manure, age of cane when harvested and moisture conditions before harvesting. Other manures are shown necessary on certain soils to ensure maximum gain from nitrogen. Treatment of each successive crop with potash is shown essential on potash-deficient areas. Potash, appropriately used, has frequently been found to improve crop quality. The relative merits of superphosphate and ammonium phosphates have been compared. Measures of the effects on yield of pen manure, molasses and filter-press mud have again been made. The data given by the manurial experiments support the conclusion that organic manures are not essential in the husbandry of sugar cane if inorganic manures are intelligently used.

Cultural and Planting Methods.

85. Information indispensable for successful use of megasse as a mulch has been secured. Effects on yield of varying the distance between cane stools, of deepening bed drains and of modifying the dimensions of furrows have been investigated.

Varieties.

86. Thirty-one new varieties of cane were under trial in 1940. Five have given outstanding results. The main varieties at present grown are B.H.10 (12), Uba and Co.213. P.R. 803 (which is resistant to froghopper damage) shows promise of replacing B.H.10 (12) on fertile soils subject to froghopper attack. B.34104 (susceptible to froghopper damage) and B. 3439 (resistance unknown) are likely to replace B.H.10 (12) and Co.213 on soils of intermediate fertility. Co.419 and Co.421 show more promise than B.H. 10 (12), Uba and Co.213 on poor soils.

(2) Soil Analyses relating to Manurial Treatment.

87. The field-to-field soil surveys, mentioned in previous Annual Reports, are actively progressing. In the laboratory 222 soil analyses were made during the first half of 1940.

(3) Soil Surveys for Allocation of Varieties.

83. Detailed soil surveys, with particular reference to the allocation of varieties, have been undertaken by Orange Grove and Esperanza Estates. Mr. C. F. Charter, who is working under Mr. Turner's technical direction, has been engaged by these Estates for the investigations.

(4) General.

89. Laboratory facilities were withdrawn at the end of July and have not yet been replaced

CACAO AGRONOMY.

90. The Cacao Agronomist, Dr. F. J. Pound, reports as follows :—

Cacao.

(1) *River Estate.*

91. The experiments programme at River Estate was carried out according to plan.

92. The replanting of a field at River Estate with cuttings from the Imperial College of Tropical Agriculture was carried a stage further and some crop was reaped from the cuttings planted in 1937. A further area was prepared for planting in 1941. The yield from Field 19 Variety-fertiliser trial is increasing and giving very valuable data. Potash is the most important fertiliser and continues to show large residual effects on River soil, phosphates, nitrogen and lime are less valuable although phosphates continue to give slight benefits to heavier soil vegas on outside estates.

(2) *Marper Estate.*

93. At Marper Estate the witchbroom testing nurseries have assumed major importance. Of the local selections some clones are decidedly more resistant than others. Observation shows that, now the trees have reached bearing stage, there is a wide variation in resistance, some clones are highly susceptible, but others have not yet shown any infection. The later planted Amazon material has grown well but will not reach the eliminating stage until 1942.

94. Over the estate witchbroom infection of vegetative parts was less than in 1939 but pod infection was higher.

(3) *Cocoa Survey.*

95. During the year a survey of cocoa properties in the Colony was almost completed and all areas now in cocoa are being classified according to their suitability for cocoa and the severity of witchbroom incidence. This data is required for the new rehabilitation scheme.

(4) *Propagation.*

96. At St. Augustine Nurseries the production of cuttings of cocoa have reached 100 per week, experiments have shown how losses in budding can be reduced and great improvements have been made in the technique of both budding and rooting cuttings.

COCONUTS.

97. Mr. F. M. Bain reports that five coconut experiments were started in August. Three of these were on clay soils, and two on sandy soils as follows :—

(1) Undulating land, clay soil, bearing trees.
(2) Undulating land, clay soil, non-bearing trees.
(3) Flat land, clay soil, bearing trees.
(4) Flat land, sandy soil, bearing trees.
(5) Undulating land, sandy soil, bearing trees.

98. In (1) and (2), contour drainage, with and without manurial lime, are the treatments to date. After about three years treatments, it is intended to superimpose N,P,K treatments on the lime and no lime blocks.

99. In (3) it is uneconomic to attempt to change the physical conditions of the soil, but the trees live to an age where it is economic to grow coconuts if the price is around $3.00 per lb. copra. From previous experiments it would appear that a 3:2:2 fertiliser is likely to increase yields and a field—natural yield of which are known for the past ten years—has been treated with this fertiliser at the rate of 6 lb. per bearing tree, to see if the cost per 100 lb. copra could be reduced by increasing yields, thus increasing the economic value of palms during the age which they live.

100. In (4), contour drainage with pen manure is a basic dressing with N,P,K treatments superimposed. This treatment is in accordance with previous coconut findings.

101. In (5), pen manure is a basic dressing with N,P,K. treatments superimposed. In the absence of irrigation facilities, this is the treatment that would appear to offer best possibilities for successful growing of coconuts on this type of soil.

CITRUS.

102. The Citrus Agronomist, Mr. F. M. Bain, reports as follows :—

Mineral Deficiency Experiments.

103. The experiment on the efficacy of applications of Magnesium Sulphate in controlling "Bronzing" in the Santa Cruz Valley was continued. The results indicated that the trouble was considerably reduced by these applications. It was also apparent that Nitrogen deficiency was also associated with Magnesium as trees which were treated with both elements were the best trees. Trees which had Magnesium treatment only showed Nitrogen deficiency after the trees took on crop. At the end of the year all trees were given additional treatments with the elements missing to bring all treatments to a uniform one containing Nitrogen, Potash, Phosphate and Magnesium.

104. It is now possible to run a manurial trial on the block giving Magnesium and Phosphate as a uniform basal dressing and varying Nitrogen and Potash. This will be carried out in the coming year.

105. Experiments to control Zinc deficiency were carried out with a zinc spray at Santa Cruz and Arima during May and June. Improvement in the condition of the trees may already be seen. This will be repeated as the concentration of zinc sulphate used was below usual requirements in order to guard against a follow up of scale infestation.

106. Boron deficiency was observed in the Cumuto area at the end of the year and it is proposed to lay down a field trial during the coming year.

MISCELLANEOUS CROP INVESTIGATIONS.

REPORT BY DR. F. J. POUND.

Tonka Beans.

107. Several clonal blocks at River Estate were completed for experiments and others are well advanced. Preliminary fertiliser results show that Sulphate of Ammonia may be extremely beneficial in early cropping of young trees.

Adlay.

108. About 1,000 lb. of grain was distributed for planting and very good results obtained from plots on the heavier soil in wet districts. Compared with maize the return of edible material is good. Methods have been worked out whereby the grain can be hulled in a simple corn mill or rice huller suitably adjusted. Specially designed hulling and milling machinery has been ordered from England. It has already been demonstrated that the grain is palatable as a rice substitute, that 30 per cent. Adlay flour in bread is good and 50 per cent. in pastry and biscuits and that the fine kibbled grain makes an excellent breakfast porridge. Pen manures and nitrogenous fertilisers considerably increased the yields on plots with light soil.

Urena lobata.

109. The extensive series of experiments being conducted on this crop were brought to a close with the conclusions that at present labour rates cocoa and sugar sacks would cost 13 cents per lb. as compared with 6 cents per lb. pre-war price for imported jute sacks.

Rice.

110. Some fifty varieties of reputed salt tolerant rice were grown in tubs where the saline concentration was raised gradually from zero to 50 per cent. sea water and maintained at that level until harvest. All controls died but although none of the tolerant varieties died some showed large percentages of empty glumes symptomatic of salt damage.

111. During the year the drought necessitated emergency irrigation of the Bejucal area which was helped by the newly completed dam on the Cunupia River. Some interesting results from selection and manuring of swamp rice were obtained. It would appear that most Trinidad rice fields would benefit by dressings of Nicifos I and organic matter.

Vegetables.

112. Some of the problems concerned with vegetable growing were investigated during the year. The advantage of tillage, incorporation of organic matter and fertilisers into the soil was well demonstrated. A cheap but efficient irrigation system was laid out as a demonstration. Work with tomatoes showed that good cultivation is not able to evade the ravages of bacterial root rot.

113. On Land Settlements striking advantages were obtained from forking and manuring certain supposedly infertile soils.

114. Simple Soya Bean trials suggested that "Higan", "Sousei" and "Ogeman" are good early varieties and "Venezuela", "Seminole" and "Nanda" are good later maturing varieties under Trinidad conditions.

SPECIALIST REPORTS.

ENTOMOLOGICAL INVESTIGATION.

115. The Entomologist, Mr. A. Pickles, reports as follows:—

Sugar Cane.

116. Outbreaks of the sugar-cane froghopper were even more severe and widespread than they had been in 1939, itself a year of exceptionally severe outbreaks. It is estimated that about 10,000 acres of estate canes were severely blighted.

117. Control of froghopper outbreaks by the use of Pyrethrum dust was attempted on four groups of estates, but on only one of these (Woodford Lodge Estates) were the results satisfactory. At Woodford Lodge, in spite of large froghopper populations, blight was restricted to very small areas not exceeding 20 acres in all.

118. Young plant canes were seriously attacked by the Chrysomelid beetle, *Myochrous armatus*, in the early part of the wet season. Large acreages of cane were also severely attacked by the leaf-eating caterpillars *Laphygma frugiperda* and *Remigia repanda*.

Citrus.

119. The spraying experiment for the control of citrus scab was concluded. The experiment showed that applications of fungicide before and after blossoming were definitely superior to any single application. Scale insect infestation after treatment with Bordeaux Mixture or Perenox could be prevented by combining oil emulsion with the fungicides.

120. Scale insects (*Lepidosaphes* spp. and *Prontaspis citri*) were responsible for injury to grapefruit trees in certain districts. The outbreaks were successfully controlled by diesel oil emulsion applied from a power sprayer. It was found that the oil could be readily emulsified in the spray tank by means of common household soap.

121. Oranges in certain districts were severely attacked by the caterpillar *Laspeyresia* sp.

Stored Products.

122. Considerable publicity was given to methods of grain preservation in open drums ; much remains to be done in popularising these methods and in devising others to meet various conditions.

Pests of Lawns.

123. Outbreaks of chinch bug (*Blissus insularis*) were exceptionally severe, especially in the Port-of-Spain district where many established lawns were completely ruined. Mole cricket outbreaks of unusual severity occurred just as the chinch bug attacks were passing away. Nicotine sulphate and carbon bisulphide emulsion were found to be effective in controlling chinch bug.

PLANT DISEASES.

124. Mr. C. A. Thorold, reports that he has worked in close touch with Mr. R. E. D. Baker of the Imperial College of Tropical Agriculture who continued to render valuable assistance during the year.

125. Witches' Broom of Cocoa and Citrus Scab continued to be diseases of major importance in their respective spheres. There were no other severe outbreaks of disease.

Cocoa.

126. The most disturbing feature of Witches' Broom disease is the extent to which the amount of pod infection has increased in recent years.

127. The fundamental aspects of this disease are being studied in addition to the more immediate and practical ones of control methods.

Citrus.

128. Scab disease of Grapefruit continues to menace the production of clean fruit for export within the same limited area as before, but even there the disease was not severe in 1940.

129. The loss of many lime trees, and the gradual deterioration of others through root disease is a serious problem in lime cultivation throughout the island.

130. Preliminary work on the preparation of planting material for root stock trials was undertaken.

Immortelle Disease.

131. The loss of Bocare Immortelle trees through disease in certain areas is of importance, because of the resulting exposure of the cocoa and the ingress of grass weeds. Details of the combined investigations carried out with Mr. R. E. D. Baker and Mr. S. H. Crowdy are to be published. The fungus (*Sphaerostilbe musarum*) associated with this Immortelle disease was found rather commonly on moribund cocoa material during the rains.

Bananas.

132. The widespread occurrence of the Leaf Spot disease continued to limit the output of bananas for export and local consumption. It is found that where the plants receive some shade from neighbouring trees or topographical features, then the severity of the disease is much less. The provision of light shade for bananas is now recommended, details will be found in Tropical Agriculture 17, pp. 213-214, 1940.

133. Grateful thanks are due to the owners and managers of the following estates who have generously provided land for banana investigations, and otherwise co-operated in the experiments: La Louisa, Tamana ; San Juan, Gran Couva ; Gran Riviere, Toco ; and Monte Video, Sans Souci.

Food Crops.

134. Various lectures and demonstrations respecting the control of diseases affecting food crops have been given during the year.

SOIL SURVEY.

135. The Soil Chemist, Dr. E. M. Chenery, reports that the soil information of about 400 large and 8,000 small estates has been card indexed from the maps compiled in 1939.

136. Routine soil survey operations have been conducted in the Brothers Road, Guaracara, Chin Chin Road and Aripo Savannah districts.

137. A special study has been initiated on the water relationships of certain soil types at bi-monthly intervals throughout the year.

138. A routine soil-survey laboratory has been established in the Chemistry Building of the Imperial College of Tropical Agriculture by kind permisson of the Principal and Professor Hardy to whom thanks are also due for the loan of apparatus and chemicals.

139. Close co-operation has been maintained with the geological departments of the chief oil companies.

VETERINARY.

140. The Senior Veterinary Officer, Captain H. V. M. Metivier, reports as follows :—

Proclaimed Diseases.

Anthrax.

141. There was a sporadic case during the year and the necessary preventive measures were enforced.

Swine Fever.

142. The restrictions against the importation of pigs and pig-products from Barbados remained in force owing to the existence of the disease there.

Paralytic Rabies (bat-transmitted).

143. No case occurred in the domesticated animals, but the campaign against the disease was continued and 4 out of 1,500 bats examined were found to have Negri bodies.

Rabies (Ordinary).

144. All canine and feline animals (25) imported were quarantined except those from Great Britain.

Equine Encephalomyelitis.

145. The importation of horsekind from Venezuela was prohibited.

Tuberculosis.

146. The routine testing of dairy cattle in the rural areas that supply milk to the city as well as in certain other districts was carried out and 32 reactors were found. There were 9 cases reported at the Abattoirs.

Non-Proclaimed Diseases.

Bovine piroplasmosis.

147. Pure bred stock are most affected by the condition but natural immunity is usually developed in young imported stock.

Strangles and Influenza.

148. The position in regard to these diseases was quite satisfactory due chiefly to fewer importations of horsehind.

Contagious Abortion.

149. The disease continued to be confined almost exclusively to the larger dairies.

Contagious Opthalmia in Calves.

150. The condition which is apparently spread by flies is due chiefly to overcrowding, particularly in the larger dairies where the stock are kept under intensive management.

Inspection of Animals.

151. Animals imported into the Colony were inspected as usual and the following were examined Horses 27, Mules 89, Donkeys 46, Dogs 26, Cat 1, Cattle 5,696, Pigs 6,852, Sheep 2,744, Goats 6,529.

Quarantine Station.

152. The number of animals admitted to the Quarantine Station was 6,413. The facilities for landing on the wharf and transportation to the Quarantine Station have been satisfactory and casualties and accidents few.

153. The number of animals vaccinated against Anthrax and tuberculin tested at the Quarantine Station was 378 and 135 respectively.

Research Operations.

154. The Government Bacteriologist continued work with the virus of Paralytic Rabies (bat-transmitted) in livestock. The experiment of injecting dogs by exposure to the bites of infected Desmodus bats was not successful and thus confirmed the resistance of dogs to the virus.

ANIMAL HUSBANDRY.

155. Captain H. V. M. Metivier reports that in conjunction with the Imperial College of Tropical Agriculture digestive trials were carried out in the following fodders:—

1. Bamboo grass .. .. .. Paspalum fasciculatum.
2. Para Grass .. .. .. Brachiaria mutica.
3. Guinea Grass .. .. .. Panicum maximum.
4. Guatemala Grass .. .. Tripsacum laxum.
5. Sweet Potato Vines .. .. Ipomoea batatas.

156. The nutritive values of the above fodders are expressed in lb. of Dry Matter, Starch Equivalent, Protein Equivalent, and digestible Crude Protein, per 100 lb. of the fresh material, as follows:—

	D. M.	S. E.	P. E.	Digestible Crude Protein.
1. Bamboo Grass	20.80	9.47	0.61	0.65
2. Para Grass	19.90	9.18	1.12	1.26
3. Guinea Grass	21.45	8.69	0.90	1.39
4. Guatemala Grass	18.95	10.22	0.80	1.10
5. Sweet Potato Vines	21.90	12.08	1.55	1.88

157. At the Stock Farm in Trinidad the milking qualities of the Holstein-Zebu cross, specially selected Zebu stock is compared with the Sahiwal or Montgomery cattle.

158. The British Alpine and the Jumnapari goats are bred at the Farm in the pure state, the former as a dairy type and the latter as a dual purpose animal.

Improvement of Marketing of Animals and Animal Products.

Animals.

159. The scheme for the disposal of livestock from Tobago in Trinidad was continued by the Livestock Officer in conjunction with the Veterinary Officer, Tobago.

Milk.

160. There has been an acute demand for fresh milk due no doubt to the higher standard of living and there has also been a progressive increase in production.

161. Owing to the increased cost of production the price of milk had to be increased proportionately.

IMPERIAL COLLEGE OF TROPICAL AGRICULTURE.

162. I take pleasure in recording the continued assistance received from the Principal and Members of the Staff of the Imperial College of Tropical Agriculture in many matters relating to the Colony's agriculture.

PUBLICATIONS.

Field Experiments on Sugar Cane in Trinidad. Annual Report for 1940. (Sugar-Cane Investigation Committee). P. E. Turner, M.SC., F.I.C.

List of Cultural Manurial and Varietal Experiments on Sugar Cane in Trinidad in 1940. (Sugar-Cane Investigation Committee). P. E. Turner, M.SC., F.I.C.

Use of Sulphate of Ammonia on Sugar-Cane Soils. (Proceedings of Agricultural Society of Trinidad and Tobago, XL, 2 180). P. E. Turner, M.SC., F.I.C.

AGRICULTURAL LEGISLATION.

163. The following Ordinances affecting agriculture came into force during the year :—

No. 8—Plant Protection Ordinance, 1940.

No. 23—Agricultural Industry Hurricane Relief (Amendment) Ordinance, 1940.

No. 28—Cocoa Industry Ordinance.

R. O. WILLIAMS,
Acting Director of Agriculture.

22nd May, 1941.